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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/515,504	02/29/2000	NORIMITSU SAKO	105393	1188
25944	7590	03/11/2004	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			YE, LIN	
			ART UNIT	PAPER NUMBER
			2612	
DATE MAILED: 03/11/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/515,504

Applicant(s)

SAKO, NORIMITSU

Examiner

Lin Ye

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1, 4, 6, 7-11, 13-17, 19, 21-23 and 25-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1, 4, 8, 9, 11, 13, 16, 17, 19, 23, 25 and 28 is/are allowed.
- 6) ☒ Claim(s) 6, 7, 10, 14, 15, 21, 22, 26 and 27 is/are rejected.
- 7) ☒ Claim(s) 1 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed 12/22/03 have been fully considered and **they are persuasive** as to claims 1,4, 8-9, 11, 13, 16-17, 19, 23, 25 and 28.
2. Applicant's arguments filed 12/22/03 have been fully considered but **they are not persuasive** as to claims 6-7, 10, 14-15, 21-22 and 26-27.

Regarding claim 6, the applicant argues that Lee fails to disclose or suggest a CMOS image sensor comprising a plurality of photogate-**type** pixel sensors arranged in a two dimensional array. The examiner disagrees. It should be noted that “photo gate pixel sensor” is not same as means “photogate-type pixel”. See MPEP. 2173.05(b) E. “Type”, the word “type” to an otherwise definite expression extends the scope of the expression. For this reason, the photo diode pixel sensor can be considered as photogate-**type** pixel sensor.

### ***Claim Objections***

3. Claim 1 objected to because of the following informalities:

For claim 1, lines 10, is misspelling “reset”.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

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4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claim 6 is rejected under 35 U.S.C. 102(e) as being anticipated by Lee U.S. Patent 6,549,234.

Referring to claim 6, the Lee reference discloses in Figures 3-5, a CMOS image sensor plurality of photogate-type (e.g., can be considered as photodiode pixel sensor) pixel sensors arranged in a two-dimensional array; a pair of pass transistors (NM42 and NM43) for passing a photo gate control signal (from a predetermined poison in a pixel sensor structure Pxji) thereby transferring corresponding signal charges, only when a corresponding row is selected; and a pair of pass transistors for passing a pixel transfer signal thereby allowing corresponding signal charges to be transferred, only when a corresponding column block is selected (et. Unlike the CCD image sensor, CMOS image sensor cal allows arbitrary pixels to be read out, see Col. 5, lines 1-32).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee U.S. Patent 6,549,234 in view of Pain et al. U.S. Patent 6,326,230.

Referring to claim 7, The Lee reference discloses all subject matter as discussed in respected claims 6, except the reference does not explicitly show wherein said pixel transfer signal falls down before said photogate control signal rises up.

The Pain reference discloses in Figure 3D, a pixel transfer signal (TX) falls down before the photogate control signal (PG) rises up. The Pain reference is evidence that one of ordinary skill in the art at the time to see more advantages photogate control signal rises up after the pixel transfer signal falls to prevent any charge from flowing back into sense nodes (See Col. 6, lines 8-13). For that reason, it would have been obvious to the CMOS sensor including means for pixel transfer signal falls down before said photogate control signal rises up disclosed by Lee.

8. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee U.S. Patent 6,549,234 in view of Umeda et al. U.S. Patent 6,452,632.

Referring to claim 10, The Lee reference discloses all subject matter as discussed in respected claims 6, except the reference does not explicitly show means for selectively connecting the output of the pixel sensor to a circuit for reading one row of block.

The Umeda reference discloses in Figures 20A-B and 90, a CMOS image sensor (see Col. 14, lines 44-54), comprising a pixel sensor; and means for selectively connecting the output of the pixel sensor to a circuit for reading one row of block. The Umeda reference is

evidence that one of ordinary skill in the art at the time to see more advantages the CMOS type image sensor can be designed to selectively activate horizontal and vertical scanning lines to allow arbitrary pixels to be read out. For that reason, it would have been obvious to the CMOS image sensor has means for selectively connecting the output of the pixel sensor to a circuit for reading one row of block disclosed by Lee.

9. Claims 14, 21 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee U.S. Patent 6,549,234 in view of Arai et al. U.S. Patent 5,128,769.

Referring to claims 14, 21 and 26, The Lee reference discloses all subject matter as discussed in respected claim 6, except the reference does not explicitly state automatically adjusting the gain, focus and detecting substantial change in an image based on a several blocks in a central area of said CMOS image sensor.

The Arai reference discloses in Figures 1-2 and 10, a video camera includes an image sensor (2) of CCD or MOS type for estimating the average brightness over an entire screen of said image sensor from brightness detected for a several blocks in a central area (See Figure 2, central area 23A) and in a peripheral area of the screen (23B) (See Col. 5, lines 49-60 and Col. 6, lines 1-20); and a programmable gain amplifier (variable gain amplifier 64) having a gain that is automatically controlled in accordance with the estimated brightness (See Figure 10 and Col. 15, lines 44-55); detecting whether there is a substantial change in an image by reading several blocks in a central area and in peripheral area of an image screen of the image sensor; means for continuously taking an image over the entire screen when a substantial change is detected (See Col. 14, lines 61-68 and Col. 15, lines 1-4); adjusting focus by reading several blocks in a central area of an image screen of said CMOS image

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sensor; and means for taking an image over the entire screen after completion of the focus adjustment (See Col. 9, lines 7-18). The Arai reference is evidence that one of ordinary skill in the art at the time to see more advantages the video camera system can perform center area weighted measuring mode to obtain a proper exposure, focus adjustment and suppress an unstable change in the exposure amount for a principal subject (as center area of image) caused by a motion of the principal subject or the video camera. For that reason, it would have been obvious to the camera device can perform automatically adjusting the gain, focus and detecting substantial change in an image based on a several blocks in a central area of said CMOS image sensor disclosed by Lee.

10. Claim 15, 22 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee U.S. Patent 6,549,234 in view of Pain et al. U.S. Patent 6,326,230 and Arai et al. U.S. Patent 5,128,769.

Referring to claims 15, 22 and 27, the Lee, Pain and Arai references disclose all subject matter as discussed with respected to same comment as with claims 14, 21 and 26.

***Allowable Subject Matter***

11. Claim 1,4, 8-9, 11, 13, 16-17, 19, 23, 25 and 28 allowed. The following is an examiner's statement of reasons for allowance:

The prior art does not teach or fairly suggest a a CMOS image sensor comprising pxiel sensors arranged in the form of a two dimensional array, each pixel sensor comprising a photo diode at a signal detection node and a pair of pass transistors, which passes a photo diode reset signal to a gate of a transistor that resets the photo diode only when the pixel

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sensor is selected, means in each pixel sensor for obtaining a signal whose reset noise is reduced and that corresponds to the absolute value of the amount of incident light, and means for outputting the signal in a block scanning fashion, wherein the photo diode reset signal is given as the logical AND of a column block selection signal and a pixel reset signal.

### *Conclusion*

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
- a. Watanabe U.S 6,166,767 discloses in Figure 1, an imaging device comprising: AND circuits 11, a control signal line 12, and reset transistor 13.
  - b. Fossum et al. U.S 5,949,483 discloses an imaging device has a block selection circuit comprising: column select 19 and multiplexer 21 circuits.
13. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,



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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Lin Ye** whose telephone number is **(703) 305-3250**. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy R Garber can be reached on (703) 305-4929.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, DC. 20231

Or faxed to:

(703) 872-9314

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.


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Lin Ye

March 8, 2004

  
WENDY R. GARBER  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600